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IRON AGE

THE MANAGEMENT MAGAZINE FOR METAL PRODUCERS

A Fairchild Business Publication

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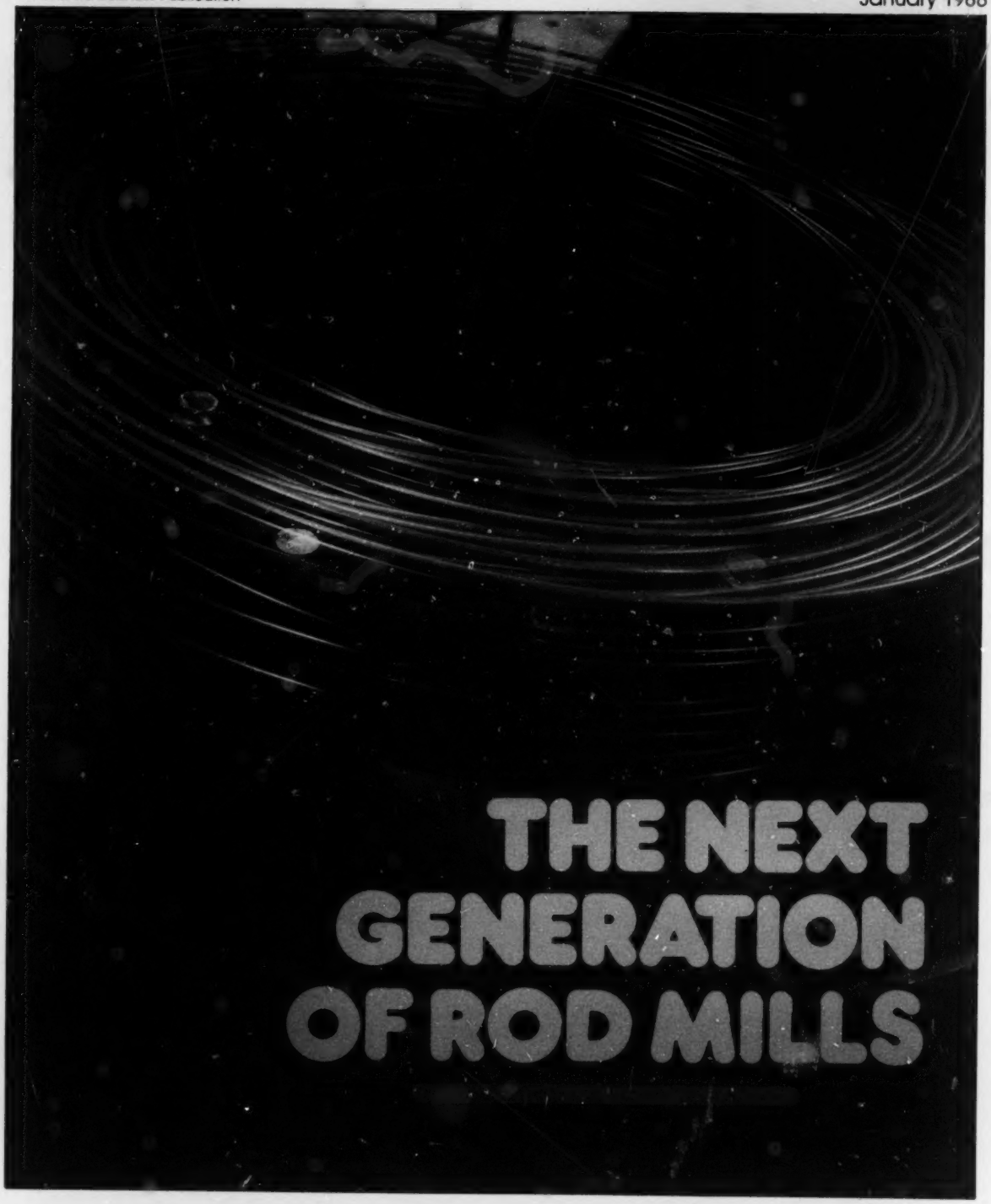

THE NEXT GENERATION OF ROD MILLS

IRON AGE
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Thin Strip Casting

I read with interest your article "Steelmakers pursue thin strip casting" (*Iron Age*, August 1987, p. 14), especially the results of the Armco-Westinghouse project for the DOE.

Dr. Alan Male of Westinghouse reports a great deal of success with the melt overflow technique producing strip 0.020 in. thick. As the developer and patent holder of the melt overflow process, this result is very encouraging to us at Ribtec. Since 0.020 in. is heavy enough for a certain amount of cold processing, this test is a significant step in moving from the liquid steel stage to the final product.

Lloyd E. Hackman
President
Ribtec Technology Corp.

Matching Wits

I read your editorial every month and enjoy very much your "stand back and look at the wider picture" views. Keep up the good work.

(Regarding) your latest inventive and interesting survey idea ("1995: Match your wits with those at the top," *Iron Age*, October 1987, p.5.) The span between now and 1995, in my view, will pass through two major cycles, which make the questionnaire less indicative of how to plan and how to respond as executives, unless the shorter range situations are accurately assessed.

Cycle one will see the temporary drop in the U.S. dollar make foreign imports expensive and U.S. exports more attractive.

This is the phase we are entering now, and our shortsighted CEO's, accountants and MBA's will think we are reborn again. When in reality, foreign excellence and strength will be the main reason for the U.S. dollar drop.

The weak U.S. dollar will give us a temporary boost and an immediate return to temporary prosperity, even a good deficit reduction. This will automatically produce a stronger U.S. dollar, much stronger that the present.

As the U.S. dollar climbs, cycle two begins (about late 1988-89) and the slow gradual return of the reality of obsolete industry and misinformed and outdated CEO's and advisors.

The above seem obvious to me, and I would see our present and future challenges in avoiding excesses while the world supply and demand trends are so cyclical. Future CEO's must develop our underutilized local talent.

A. Forgeron
Sydney Steel Corp.
Sydney, N.S.

....This is a great idea. I'll give more weight to your survey than the Conference Board's.

Eugene E. Paul
Past President
American Foundrymen's Society
Leesburg, Ind.

...I decided to do this quickly to give 'gut reaction' answers, not those cleverly thought-out by the head honchos. I look forward to the comparison.

Frank Johnson
President
Drever Co.
Huntingdon Valley, Pa.

I've devoted all of three minutes to answering these questions. Although I'm not sure my answers will agree with those of the experts, I'll bet they will be more accurate. Let's revisit in 1995.

Herb Townsend
Bethlehem Steel Corp.
Bethlehem, Pa.

This is a prime example of how you can word questions in a survey to obtain the results you want to see. I don't consider this very scientific at all. Regardless, attached are my 'prompted' answers.

Jim Klick
Plant Metallurgist
J&L Specialty Products Corp.
Louisville, Ohio

Letters, preferably typewritten, should be addressed to Editor, Iron Age, 201 King of Prussia Road, Radnor, PA 19089. Unsigned letters are not published, but names will be withheld on request.

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ANALYSTS ARE SELLING STEEL'S BOOM SHORT

Inventory adjustment? The USS strike? Some steel executives say they are getting a little tired of analysts who say the economy is faltering and that the steel industry isn't booming.

Is the booming steel market providing a true reading of the economy?

Until recently, it was assumed the answer was no. Industry analysts said there was nothing in the government's statistics to suggest the steel boom reflected decisive changes in the domestic economy or the trade balance.

The boom was attributed to a number of special and temporary factors. Price miscalculations had supposedly forced abnormal inventory replenishment. The strike at the USS division of USX Corp. had reduced steel supply.

Those explanations were still being offered toward year's end, but in the opinion of some steel executives, they were starting to wear thin. "If there's a lot of inventory out there, we can't find it," said Richard P. Simmons, chairman of Allegheny Ludlum Corp. "The service centers have very low inventories."

By the fourth quarter, production at USS was back near normal. "We're operating at very high levels," said David M. Roderick, chairman of USX. "At a number of our locations, we have practically gone through our recall list," said Mr. Roderick in October.

With the boom continuing and with the early theories looking questionable, Mr. Simmons felt the steel market was providing an accurate picture while the government's numbers were giving a false impression, or at least an outdated one.

"The economy is stronger than the statistics would indicate," he said. Producing stainless and electrical steels, Allegheny Ludlum has been enjoying sustained good times.

"We see stainless flat-rolled setting a new record this year," said Mr. Simmons in November. "The market is running at a million-ton rate."

For Allegheny Ludlum, the key indicator is cold-rolled stainless strip. Nearly all of this is shipped directly to manufacturers and is unaffected by service center inventory swings. In the period starting in May and extending into the fourth quarter, the company's orders for stainless strip were double the historic rate.

Others feel that the economic recovery still has not reached all segments of the nation's economy.

"We had a bi-coastal boom," said David Lloyd-Jacob, chairman of Levinson Steel Co.

Mr. Lloyd-Jacob was referring to the widely held view that we are nearing the end of a long boom. There might have been good times in the East Coast financial centers and on the West Coast, he indicated, but the inland manufacturing areas are just starting to recover from a six-year recession.

"We were referred to as the fly-over people," said Mr. Lloyd-Jacob.

In steel and in manufacturing, he said, attitudes as well as orders, have just started to recover. "We all had a lack of self-confidence," he explained.

Price weakness continued after demand improved because of lingering paranoia, he said.

The tight supply isn't confined to steel, he noted. "Look at aluminum," he said. "It's worse in aluminum."

'If we're only running at 81 pct of capacity, it's the highest 81 pct that I've ever seen.'

Richard P. Simmons, chairman, Allegheny Ludlum Corp.

Mr. Simmons said Allegheny Ludlum was finding strength in its buying as well as its selling. Supplies of machinery, materials and everything else have tightened, he said.

With widespread signs of high operating levels, he added, it was difficult to believe the government's estimates of plant utilization.

"If we're only running at 81 pct of capacity," he said, "it's the highest 81 pct I've ever seen."

Mr. Simmons also suspects there is far less plant capacity available than the government realizes. If he is right, there should now be pressure on industry to expand. The steel lag of the past six years has been partly due to the absence of massive expansion projects.

Allegheny Ludlum's experience runs counter to the general perception in another important re-

1986 INDIRECT STEEL TRADE

	IMPORTS		EXPORTS		NET BALANCE	
	In Millions of Tons	Pct of Tons	In Millions of Tons	Pct of Tons	In Millions of Tons	Pct of Tons
Automotive	8.7	50	2.9	35	-5.8	62
Machinery	5.3	30	3.8	47	-1.5	16
Other	3.5	20	1.5	18	-2.0	22
Total	17.5	100	8.2	100	-9.3	100

1986 AUTOMOTIVE INDIRECT STEEL TRADE

(In Millions of Net Tons)

	IMPORTS	EXPORTS	NET BALANCE
Motor Vehicles	7.5	1.3	-6.2
Stampings, Parts and Accessories	1.2	1.6	0.4
Total	8.7	2.9	-5.8

Source: AISI

spect. It's generally assumed that the weakening of the dollar has had little effect on the nation's trade deficit. Allegheny Ludlum's exports were up 41 pct in the first nine months of 1987 while imports of stainless sheet and strip were down 23 pct in this period.

Trade Pattern

The stainless trade pattern was roughly in line with overall direct steel trade. Through the first eight months of 1987, steel imports were down 4 pct while exports were up 28 pct.

The overall merchandise trade balance did decline in September of 1987, but it was still over $14 billion. With regard to indirect steel trade, a recent report by the American Iron and Steel Institute (AISI) indicated the U.S. situation had worsened.

In 1986, said AISI, imports of autos, machines and other metal items represented 17.5 million tons of steel.

The imports were partly offset by 8.2 million tons of steel bearing exports, but the net intake of 9.3 million tons was nearly double that of 1984.

These returns were disappointing, but not entirely surprising. The dollar didn't start weakening until 1985, and it takes a long time for currency swings to change trade patterns. When trade statistics for 1987 are available, they will hopefully show some positive results.

"We see imports starting to improve and exports starting to stabilize," said Larry Mosser, senior industry analyst at Bethlehem Steel Corp. "You're not going to see the deficit increase."

Stability would be a step in the right direction for indirect steel trade after the growing steel deficits of recent years. "All it has to do is quit getting worse and it gets better," said Mr. Simmons. With imports static, he explained, domestic producers will share in the growth of the economy.

A dramatic reduction in the steel deficit was considered unlikely by Mr. Mosser, whose company has played a leading role in the calculation of indirect trade.

"The data we look at indicate there's still a significant deficit," said Mr. Mosser.

"You're still going to get a lot of imported autos," said David Long, another industry analyst at Bethlehem. He noted that autos account for around 50 pct of the indirect steel imports.

Mr. Roderick of USX said the weakening of the dollar had created export opportunities. "We already have a cost advantage versus the Europeans and versus the Japanese," he said. "The lower the dollar goes in value, the more competitive we become."

Mr. Roderick said the strength of the domestic market had made it impossible for USS to exploit its cost advantage. Should domestic demand ease, he said, the untapped foreign business will be used to maintain production.

Mr. Simmons observed that we seem to be in a cycle where the economy is running ahead of the statistics and the predictions. Going into 1987, he said, people were predicting steel shipments as low as 65 million tons. The estimates were raised to 70 million and then to 75 million tons.

Hopefully, things will continue to turn out better than expected.

By George J. McManus

ANNUAL STATISTICAL REVIEW OF PRODUCTION AND PRICES

U.S. Monthly Raw Steel† Production, Net Tons

	1970	1971	1972	1973	1974	1975	1976	1977	1978
Jan.	11,243,000	11,274,000	10,001,000	12,373,000	12,726,000	11,584,000	9,835,000	9,089,000	10,301,000
Feb.	10,498,000	10,874,000	9,980,000	11,626,000	11,598,000	10,862,000	9,907,000	8,859,000	9,643,000
Mar.	11,886,000	12,645,000	11,588,000	13,088,000	12,758,000	11,980,000	11,294,000	11,049,000	11,083,000
Apr.	11,386,000	12,565,000	11,588,000	12,789,000	12,442,000	10,667,000	11,439,000	11,167,000	11,528,000
May	11,574,000	12,920,000	11,937,000	13,174,000	12,752,000	9,864,000	12,136,000	12,201,000	12,320,000
June	11,323,000	11,491,000	10,980,000	12,488,000	12,185,000	8,744,000	11,605,000	11,364,000	11,861,000
July	10,781,000	9,942,000	10,341,000	12,290,000	12,155,000	8,370,000	11,400,000	10,319,000	11,388,000
Aug.	10,765,000	5,774,000	10,842,000	12,181,000	11,837,000	8,648,000	11,128,000	10,392,000	11,550,000
Sept.	10,727,000	7,678,000	10,913,000	12,229,000	11,849,000	9,295,000	10,463,000	10,050,000	11,467,000
Oct.	10,699,000	8,211,000	11,657,000	12,876,000	12,617,000	9,214,000	10,278,000	10,442,000	12,105,000
Nov.	10,008,000	8,053,000	11,398,000	12,587,000	11,614,000	8,709,000	9,494,000	9,748,000	11,654,000
Dec.	10,438,000	8,784,000	11,878,000	12,722,000	10,960,000	8,846,000	9,215,000	10,031,000	11,612,000
Total	131,514,000	120,443,000	133,241,000	150,799,000	145,720,000	116,783,000	128,000,000	125,333,000	137,031,000

	1979	1980	1981	1982	1983	1984	1985	1986	1987
Jan.	11,105,000	10,701,000	10,590,000	7,737,000	5,570,000	7,970,000	6,934,000	7,666,000	6,248,000
Feb.	10,562,000	10,332,000	10,028,000	7,178,000	5,676,000	8,142,000	6,851,000	7,171,000	5,992,000
Mar.	12,576,000	11,439,000	11,744,000	8,049,000	7,127,000	9,056,000	8,269,000	7,947,000	7,375,000
Apr.	12,196,000	10,808,000	11,243,000	7,006,000	7,292,000	8,997,000	7,872,000	7,787,000	7,402,000
May	12,789,000	9,226,000	11,423,000	6,678,000	7,412,000	9,174,000	7,830,000	7,616,000	7,641,000
June	12,230,000	7,501,000	10,451,000	6,050,000	6,993,000	7,945,000	7,292,000	6,730,000	7,349,000
July	11,821,000	6,796,000	10,160,000	5,719,000	6,921,000	7,460,000	7,010,000	6,352,000	7,342,000
Aug.	11,309,000	7,019,000	10,120,000	5,538,000	7,020,000	6,915,000	7,130,000	5,668,000	7,494,000
Sept.	10,541,000	7,767,000	9,618,000	5,299,000	7,134,000	6,378,000	6,924,000	5,644,000	7,694,000
Oct.	10,810,000	9,442,000	9,003,000	5,262,000	7,692,000	6,703,000	7,351,000	6,087,000	8,073,000
Nov.	9,997,000	10,057,000	7,962,000	4,546,000	7,263,000	6,422,000	6,987,000	5,860,000	8,000,000*
Dec.	9,996,000	10,180,000	7,671,000	4,456,000	6,991,000	6,013,000	6,500,000	5,877,000	7,800,000*
Total	136,341,000	111,835,000	120,828,000	74,577,000	84,615,000	2,528,000	87,000,000	80,405,000	88,380,000*

*Estimate

Source: AISI

†Steel in first solid state after melting suitable for further processing or sale, including ingots, steel castings and continuous or pressure cast blooms, billets, slabs, or other product forms.

U.S. Raw Steel Production, Rate of Capability Utilization

	1970	1971	1972	1973	1974	1975†	1976	1977	1978	1979	1980	1981	1982	1983	984	1985	1986	1987
Jan.	104.1	104.3	92.6	114.5	117.8	90.4	74.4	66.8	77.2	83.5	82.7	79.9	59.3	43.4	69.6	60.9	69.4	65.5
Feb.	107.6	111.4	98.7	119.1	118.8	93.8	80.1	72.1	80.1	87.9	85.3	83.7	60.9	49.0	76.0	66.1	71.8	69.5
Mar.	110.0	117.0	107.3	121.1	118.1	93.4	85.4	81.2	83.1	94.5	88.4	88.6	61.7	55.5	79.1	72.1	71.9	77.3
Apr.	108.9	120.2	110.8	122.3	119.0	84.9	88.4	83.3	88.5	93.4	83.0	87.7	55.2	58.9	80.8	71.6	73.5	80.3
May	107.1	119.6	110.5	121.9	118.0	75.9	90.8	88.1	91.5	94.8	69.6	86.2	50.9	57.9	79.8	68.9	69.5	80.2
June	108.3	109.9	105.0	119.4	116.5	69.6	89.7	84.9	91.1	93.7	58.4	81.5	47.4	56.5	71.4	66.3	63.5	79.7
July	99.8	92.0	95.7	113.8	112.5	65.1	84.8	76.7	85.1	89.9	53.1	77.6	43.8	54.3	65.3	62.1	59.2	77.3
Aug.	99.6	53.4	100.4	112.7	109.6	67.3	82.8	77.2	86.3	86.0	54.8	77.3	42.4	55.1	60.5	63.2	52.8	79.1
Sept.	102.6	73.4	104.4	117.0	113.3	74.7	80.4	77.2	88.6	82.8	62.7	75.9	41.9	57.8	57.7	63.4	54.3	83.9
Oct.	99.0	76.0	107.9	119.2	116.8	69.0	75.8	77.7	88.1	84.4	72.2	68.7	40.2	60.2	49.7	65.2	56.8	84.4
Nov.	95.7	77.0	109.0	120.4	111.1	67.4	72.2	75.0	89.4	80.6	79.5	62.8	35.9	58.7	48.4	59.0	56.5	84.0*
Dec.	96.6	81.3	109.9	117.7	101.4	66.2	67.8	74.7	87.7	78.0	77.8	58.6	34.0	54.7	45.1	58.0	82.0	54.9*
Average	103.4	94.7	104.5	118.5	114.5	76.2	80.9	78.4	86.8	87.8	72.8	78.3	48.4	56.2	65.3	64.7	62.8	77.0*

*Estimate

†Rate of Capability Utilization, begun January, 1976, revised back to January, 1975.

Source: AISI

World Steel Production

Raw steel, thousands of metric tons

	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987*
Argentina	2,700	2,800	3,200	2,700	2,500	2,900	2,900	2,600	2,900	3,200	3,600
Australia	7,300	7,600	8,100	7,600	7,600	6,400	5,600	6,300	6,400	6,700	6,100
Austria	4,100	4,300	4,900	4,600	4,700	4,300	4,400	4,900	4,700	4,300	4,300
Belgium	11,300	12,600	13,400	12,300	12,300	10,000	10,200	11,300	10,700	9,700	9,700
Brazil	11,300	12,200	13,900	15,300	13,200	13,000	14,700	18,400	20,500	21,000	21,900
Bulgaria	2,600	2,500	2,500	2,600	2,500	2,600	2,800	2,900	2,900	2,800	2,700
Canada	13,600	14,900	16,100	15,900	14,800	11,900	12,800	14,700	14,600	14,100	14,700
China	23,700	31,800	34,500	37,100	35,600	37,100	40,000	43,400	46,700	51,900	55,000
Czechoslovakia	15,100	15,300	14,800	14,900	14,300	15,000	15,000	14,800	15,000	15,100	15,300
France	22,100	22,800	23,400	23,200	21,300	18,400	17,600	19,000	18,800	17,900	17,600
West Germany	39,000	41,300	46,000	43,900	41,600	35,900	35,700	39,400	40,500	37,100	36,700
East Germany	6,900	7,000	7,000	7,300	7,500	7,200	7,200	7,600	7,900	7,900	7,800
Hungary	3,700	3,800	3,900	3,600	3,600	3,700	3,600	3,800	3,600	3,700	3,600
India	10,000	10,100	10,100	9,500	10,800	11,000	10,200	10,500	11,900	12,200	12,500
Italy	23,300	24,300	24,300	25,500	24,800	24,000	21,800	24,100	23,900	22,900	22,700
Japan	102,400	102,100	111,800	111,400	101,700	99,500	97,200	105,600	105,300	98,300	96,900
North Korea	4,000	5,100	5,400	5,800	5,500	5,800	6,100	6,500	8,400	9,000	9,300
South Korea	4,300	5,000	7,600	8,600	10,800	11,800	11,900	13,000	13,500	14,600	16,500
Luxembourg	4,300	4,800	5,000	4,600	3,800	3,500	3,300	4,000	3,900	3,700	3,300
Mexico	5,600	6,700	7,000	7,100	7,600	7,100	6,900	7,500	7,300	7,200	7,300
The Netherlands	4,900	5,600	5,800	5,300	5,500	4,400	4,500	5,700	5,500	5,300	5,100
Poland	17,800	19,300	19,200	19,500	15,700	14,800	16,200	16,500	16,100	17,200	17,000
Romania	11,500	11,800	12,900	13,200	13,000	13,100	12,600	14,400	13,800	14,300	14,100
South Africa	7,300	7,900	8,900	9,100	9,000	8,200	7,000	7,700	8,500	8,900	8,900
Spain	11,200	11,300	12,200	12,700	12,900	13,200	13,000	13,500	14,200	12,000	11,600
Sweden	4,000	4,300	4,700	4,200	3,800	3,900	4,200	4,700	4,800	4,600	4,500
United Kingdom	20,500	20,400	21,500	11,300	15,600	13,700	15,000	15,100	15,700	14,700	17,100
U.S.S.R.	146,700	151,400	149,100	147,900	148,500	147,200	52,500	154,300	154,700	160,500	159,000
United States	114,700	124,000	123,300	101,700	108,800	67,600	76,800	83,900	80,100	73,800	79,100
Yugoslavia	3,200	3,500	3,500	3,600	3,000	3,800	4,100	4,300	4,500	4,500	4,400
Others	17,700	21,100	24,600	25,700	22,700	24,300	13,600	15,000	16,800	17,900	17,800
Total	675,600	717,200	746,400	716,000	706,900	645,200	663,200	710,100	719,800	714,400	725,100

*IA Estimates. Source: International Iron and Steel Institute

U.S. Yearly Raw Steel Production*

Net Tons

	Openhearth**		Basic Oxygen Process		Bessemer***		Electric‡		
	Production	Percent of Total Output	Production	Percent of Total Output	Production	Percent of Total Output	Production	Percent of Total Output	Total Production
1966	85,025,000	63.4	33,928,000	25.4	278,000	0.2	14,870,000	11.0	134,101,000
1967	70,690,000	55.6	41,434,000	32.5	.....	...	15,089,000	11.9	127,213,000
1968	65,836,000	50.1	48,812,000	37.2	.....	...	16,814,000	12.7	131,462,000
1969	60,894,000	43.1	60,236,000	42.7	.....	...	20,132,000	14.2	141,262,000
1970	48,022,000	36.6	63,330,000	48.2	.....	...	20,162,000	15.2	131,514,000
1971	35,559,000	29.5	63,943,000	53.1	.....	...	20,941,000	17.4	120,443,000
1972	34,936,000	26.2	74,584,000	56.0	.....	...	23,721,000	17.8	133,241,000
1973	39,780,000	26.4	83,260,000	55.2	.....	...	27,759,000	18.4	150,799,000
1974	35,499,000	24.3	81,552,000	56.0	.....	...	28,669,000	19.7	145,720,000
1975	22,161,000	19.1	71,801,000	61.5	.....	...	22,680,000	19.4	116,642,000
1976	23,470,000	18.3	79,918,000	62.4	.....	...	24,612,000	19.3	128,000,000
1977	20,043,000	16.0	77,408,000	61.8	.....	...	27,882,000	22.2	125,333,000
1978	21,310,000	15.5	83,484,000	61.0	.....	...	32,287,000	23.5	137,031,000
1979	19,158,000	14.0	83,256,000	61.0	.....	...	33,927,000	23.0	136,341,000
1980	13,054,000	11.7	67,615,000	60.4	.....	...	31,166,000	27.9	111,835,000
1981	13,452,000	11.1	73,231,000	60.6	.....	...	34,145,000	28.3	120,828,000
1982	6,110,000	8..	45,309,000	60.7	.....	...	23,158,000	31.1	74,577,000
1983	5,951,000	7.0	52,050,000	61.5	.....	...	26,615,000	31.5	84,615,000
1984	8,336,000	9.0	52,822,000	57.1	.....	...	31,369,000	33.9	91,131,000
1985	6,428,000	7.3	51,885,000	58.8	.....	...	29,946,000	33.9	88,259,000
1986	3,939,000	4.9	47,600,000	59.2	.....	...	28,866,000	35.9	80,405,000
1987‡‡	.....	...	58,250,000	66.0	.....	...	30,130,000	33.0	88,380,000

*Steel in first solid state after melting suitable for further processing or sale, including ingots, steel castings and strand or pressure cast blooms, billets, slabs, or other product forms. **Included in basic oxygen process in 1987. ***Included in openhearth since 1966. ‡ Includes small tonnages of crucible steel.
‡‡ IRON AGE estimate. Source: AISI

STEEL PRICES

Iron Age Finished Steel Composite Price

	1978	1979	1980	1981	1982
Jan.	16.294	19.549	20.943	22.901	25.195
Feb.	17.324	19.549	21.038	23.362	25.195
March	17.393	19.549	21.168	23.598	25.195
April	17.670	19.606	21.739	23.776	25.297
May	17.670	19.637	21.739	23.776	25.297
June	17.670	19.668	21.739	24.232	25.297
July	17.670	20.253	21.736	24.488	25.297
Aug.	18.719	20.311	21.736	24.488	25.297
Sept.	18.719	20.311	21.736	24.488	25.297
Oct.	18.719	20.547	21.982	25.195	25.297
Nov.	18.719	20.547	22.019	25.195	25.297
Dec.	18.719	20.547	22.286	25.195	25.297
Avg.	17.940	20.006	21.655	24.224	25.271

	1983	1984	1985	1986	1987
Jan.	25.297	26.822	27.582	24.607	25.236
Feb.	25.987	26.939	27.582	24.607	25.236
March	26.217	26.939	27.582	24.607	25.236
April	26.217	26.939	27.582	24.607	25.236
May	26.217	27.405	27.582	24.709	25.236
June	26.217	27.405	27.582	24.850	25.236
July	26.217	27.582	27.582	24.850	25.236
Aug.	26.217	27.582	27.582	24.854	24.804
Sept.	26.822	27.582	27.582	24.951	24.804
Oct.	26.822	27.582	27.582	24.951	26.002
Nov.	26.822	27.582	27.582	24.951	26.002
Dec.	26.822	27.582	27.582	24.951	26.002
Avg.	26.323	27.313	27.582	24.792	25.356

Composite Price by Periods

Period	Cents per Pound
June 28, 1977 to Sept. 5, 1978	16.941
Sept. 6, 1977 to Jan. 30, 1978	16.043
Jan. 31, 1978 to Feb. 27, 1978	17.301
Feb. 28, 1978 to April 3, 1978	17.393
April 4, 1978 to April 17, 1978	17.672
April 18, 1978 to July 31, 1978	17.670
Aug. 1 1978 to Dec 31, 1978	18.719
Jan. 1, 1979 to Mar. 31, 1979	19.549
April 1, 1979 to May 12, 1979	19.606
May 13, 1979 to June 30, 1979	19.668
July 1, 1979 to July 8, 1979	20.095
July 9, 1979 to Sept. 30, 1979	20.311
Oct. 1, 1979 to Jan. 6, 1980	20.547
Jan 7, 1980 to Mar. 1, 1980	21.038
Mar. 2, 1980 to Mar. 9, 1980	21.130
Mar 10, 1980 to Mar. 31, 1980	21.180
Apr. 1, 1980 to July 6, 1980	21.739
July 7, 1980 to Oct. 4, 1980	21.736
Oct. 5, 1980 to Nov. 30, 1980	22.019
Dec. 1, 1980 to Dec. 31, 1980	22.286
Jan. 1, 1981 to Feb. 1, 1981	22.901
Feb. 2, 1981 to Feb. 28, 1981	23.362
Mar. 1, 1981 to Mar. 28, 1981	23.598
Mar. 29, 1981 to June 20, 1981	23.776
June 21, 1981 to Sept. 26, 1981	24.488
Sept. 27, 1981 to April 3, 1982	25.195
April 4, 1982 to Feb. 5, 1983	25.297
Feb. 6, 1983 to Feb. 13, 1983	25.954
Feb. 14, 1983 to Aug. 31, 1983	26.217
Sept. 1, 1983 to Feb. 12, 1984	26.822
Feb. 13, 1984 to May 13, 1984	26.939
May 14, 1984 to June 30, 1984	27.405
July 1, 1984 to Dec. 31, 1985	27.582
Jan. 1, 1986 to May 18, 1986	24.607
May 19, 1986 to Aug. 30, 1986	24.850
Aug. 31, 1986 to Jan. 3, 1987	24.951
Jan. 4, 1987 to Aug. 1, 1987	25.236
Aug. 2, 1987 to Oct. 3, 1987	24.804
Oct. 4, 1987 to Dec. 31, 1987	26.002

Cold-Rolled Sheets
At Pittsburgh, Cents Per Pound

	1982	1983	1984	1985	1986	1987
Jan.	24.65	24.65	28.15	28.15	25.15	26.90
Feb.	24.65	26.15	28.15	28.15	25.15	26.90
Mar.	24.65	26.15	28.15	28.15	25.15	26.90
Apr.	24.65	26.15	28.15	28.15	25.15	26.90
May	24.65	26.15	28.15	28.15	25.90	26.90
June	24.65	26.15	28.15	28.15	25.90	26.90
July	24.65	26.15	28.15	28.15	25.90	26.90
Aug.	24.65	26.15	28.15	28.15	25.90	27.90
Sept.	24.65	28.15	28.15	28.15	25.90	27.90
Oct.	24.65	28.15	28.15	28.15	25.90	28.15
Nov.	24.65	28.15	28.15	28.15	25.90	28.15
Dec.	24.65	28.15	28.15	28.15	25.90	28.15
Average	24.65	26.69	28.15	28.15	25.65	27.38

Hot-Rolled Sheets
At Pittsburgh, Cents Per Pound

	1982	1983	1984	1985	1986	1987
Jan.	20.80	20.80	23.75	23.75	20.75	22.10
Feb.	20.80	22.05	23.75	23.75	20.75	22.10
Mar.	20.80	22.05	23.75	23.75	20.75	22.10
Apr.	20.80	22.05	23.75	23.75	20.75	22.10
May	20.80	22.05	23.75	23.75	21.35	22.10
June	20.80	22.05	23.75	23.75	21.35	22.10
July	20.80	22.05	23.75	23.75	21.35	22.10
Aug.	20.80	22.05	23.75	23.75	21.35	20.25
Sept.	20.80	23.75	23.75	23.75	21.35	20.25
Oct.	20.80	23.75	23.75	23.75	21.35	21.50
Nov.	20.80	23.75	23.75	23.75	21.35	21.50
Dec.	20.80	23.75	23.75	23.75	21.35	21.50
Average	20.80	22.51	23.75	23.75	21.15	21.64

Tinplate
Single Reduced, 70 lb.
Dollars Per Base Box, Pittsburgh

	1982	1983	1984	1985	1986	1987
Jan.	26.29	26.29	27.74	27.74	30.12	30.12
Feb.	26.29	26.29	27.74	28.99	30.12	30.12
Mar.	26.29	26.29	27.74	28.99	30.12	30.12
Apr.	26.29	26.29	27.74	28.99	30.12	30.12
May	26.29	26.29	27.74	28.99	30.12	30.12
June	26.29	26.29	27.74	28.99	30.12	30.12
July	26.29	26.29	27.74	28.99	30.12	30.12
Aug.	26.29	26.29	27.74	28.99	30.12	30.12
Sept.	26.29	27.74	27.74	28.99	30.12	30.12
Oct.	26.29	27.74	27.74	30.12	30.12	31.38
Nov.	26.29	27.74	27.74	30.12	30.12	31.38
Dec.	26.29	27.74	27.74	30.12	30.12	31.38
Average	26.29	26.77	27.74	29.17	30.12	30.54

Galvanized Sheets*
At Pittsburgh, Cents Per Pound

	1982	1983	1984	1985	1986	1987
Jan.	26.25	26.25	30.30	30.30	30.30	30.30
Feb.	26.25	28.00	30.30	30.30	30.30	30.30
Mar.	26.25	28.00	30.30	30.30	30.30	30.30
Apr.	26.25	28.00	30.30	30.30	30.30	30.30
May	26.25	28.00	30.30	30.30	30.30	30.30
June	26.25	28.00	30.30	30.30	30.30	30.30
July	26.25	28.00	30.30	30.30	30.30	30.30
Aug.	26.25	28.00	30.30	30.30	30.30	30.30
Sept.	26.25	30.30	30.30	30.30	30.30	30.30
Oct.	26.25	30.30	30.30	30.30	30.30	31.05
Nov.	26.25	30.30	30.30	30.30	30.30	31.05
Dec.	26.25	30.30	30.30	30.30	30.30	31.05
Average	26.25	28.62	30.30	30.30	30.30	30.65

*Hot-Dipped, 10 ga

Structural Steel Shapes
At Pittsburgh, Cents Per Pound

	1982	1983	1984	1985	1986	1987
Jan.	22.90	23.90	23.90	23.90	23.90	23.90
Feb.	22.90	23.90	23.90	23.90	23.90	23.90
Mar.	22.90	23.90	23.90	23.90	23.90	23.90
Apr.	23.90	23.90	23.90	23.90	23.90	23.90
May	23.90	23.90	23.90	23.90	23.90	23.90
June	23.90	23.90	23.90	23.90	23.90	23.90
July	23.90	23.90	23.90	23.90	23.90	23.90
Aug.	23.90	23.90	23.90	23.90	23.90	23.90
Sept.	23.90	23.90	23.90	23.90	23.90	23.90
Oct.	23.90	23.90	23.90	23.90	23.90	23.90
Nov.	23.90	23.90	23.90	23.90	23.90	23.90
Dec.	23.90	23.90	23.90	23.90	23.90	23.90
Average	23.65	23.90	23.90	23.90	23.90	23.90

Steel Plates
At Pittsburgh, Cents Per Pound

	1982	1983	1984	1985	1986	1987
Jan.	24.25	24.25	25.75	25.75	18.25	19.00
Feb.	24.25	25.75	25.75	25.75	18.25	19.00
Mar.	24.25	25.75	25.75	25.75	18.25	19.00
Apr.	24.25	25.75	25.75	25.75	18.25	19.00
May	24.25	25.75	25.75	25.75	18.25	19.00
June	24.25	25.75	25.75	25.75	18.25	19.00
July	24.25	25.75	25.75	25.75	18.25	19.00
Aug.	24.25	25.75	25.75	25.75	18.25	20.25
Sept.	24.25	25.75	25.75	25.75	19.00	20.25
Oct.	24.25	25.75	25.75	25.75	19.00	21.25
Nov.	24.25	25.75	25.75	25.75	19.00	21.25
Dec.	24.25	25.75	25.75	25.75	19.00	21.25
Average	24.25	25.63	25.75	25.75	18.50	19.77

Special Quality Bars
At Pittsburgh, Cents Per Pound

	1982	1983	1984	1985	1986	1987
Jan.	23.95	23.95	25.80	27.05	26.78	26.78
Feb.	23.95	25.80	25.80	27.05	26.78	26.78
Mar.	23.95	25.80	25.80	27.05	26.78	26.78
Apr.	23.95	25.80	25.80	27.05	26.78	26.78
May	23.95	25.80	25.80	27.05	26.78	26.78
June	23.95	25.80	25.80	27.05	26.78	26.78
July	23.95	25.80	27.05	27.05	26.78	26.78
Aug.	23.95	25.80	27.05	27.05	26.78	26.78
Sept.	23.95	25.80	27.05	27.05	26.78	26.78
Oct.	23.95	25.80	27.05	27.05	26.78	26.78
Nov.	23.95	25.80	27.05	27.05	26.78	26.78
Dec.	23.95	25.80	27.05	27.05	26.78	26.78
Average	23.95	25.65	26.43	27.05	26.78	26.78

Composite Pig Iron Price
Average of Iron Age quotes on basic and foundry pig iron per net ton

	1982	1983	1984	1985	1986	1987
Jan.	$213.00	$213.00	$213.00	$213.00	$213.00	$213.00
Feb.	213.00	213.00	213.00	213.00	213.00	213.00
Mar.	213.00	213.00	213.00	213.00	213.00	213.00
Apr.	213.00	213.00	213.00	213.00	213.00	213.00
May	213.00	213.00	213.00	213.00	213.00	213.00
June	213.00	213.00	213.00	213.00	213.00	213.00
July	213.00	213.00	213.00	213.00	213.00	213.00
Aug.	213.00	213.00	213.00	213.00	213.00	213.00
Sept.	213.00	213.00	213.00	213.00	213.00	213.00
Oct.	213.00	213.00	213.00	213.00	213.00	213.00
Nov.	213.00	213.00	213.00	213.00	213.00	213.00
Dec.	213.00	213.00	213.00	213.00	213.00	213.00
Average	$213.00	$213.00	$213.00	$213.00	$213.00	$213.00

SCRAP COMPOSITES
Average of Iron Age Scrap Prices Pittsburgh Chicago, Philadelphia, Per Gross Ton

No. 1 Heavy Melt

	1982	1983	1984	1985	1986	1987
Jan.	$84.34	$61.30	$92.70	$81.00	$73.34	$76.00
Feb.	82.17	70.00	94.92	83.15	75.50	77.09
Mar.	76.83	73.09	91.25	86.75	73.57	74.56
Apr.	71.33	71.00	90.17	78.70	72.41	73.17
May	62.67	67.70	89.08	70.50	71.50	75.08
June	58.03	70.84	85.17	66.34	70.90	77.30
July	56.00	71.75	81.90	68.97	71.83	79.58
Aug.	55.69	75.04	82.25	74.17	75.10	84.57
Sept.	56.17	77.17	85.00	72.43	74.17	94.08
Oct.	52.92	77.97	82.90	71.17	73.17	108.92
Nov.	51.23	81.42	79.09	68.83	74.17	101.83
Dec.	52.59	87.25	79.03	70.23	74.24	99.83*
Average	63.35	73.71	86.12	74.35	73.33	85.17*

No. 2 Bundles

	1982	1983	1984	1985	1986	1987
Jan.	$56.50	$42.84	$59.96	$53.00	$52.83	$51.42
Feb.	56.17	48.84	62.50	55.25	53.83	51.17
Mar.	51.23	51.84	62.41	57.50	53.56	50.37
Apr.	47.58	48.84	61.03	55.24	53.08	49.83
May	44.83	46.57	60.16	49.51	52.17	51.09
June	42.83	46.34	56.50	47.17	51.77	52.70
July	41.83	45.75	51.10	50.04	52.50	54.17
Aug.	41.83	45.50	51.16	53.83	53.70	54.03
Sept.	41.47	45.50	51.83	53.04	51.67	60.75
Oct.	39.42	46.57	51.16	52.25	50.50	71.83
Nov.	38.70	49.34	51.09	50.67	50.50	69.77
Dec.	38.75	56.91	51.10	50.50	50.50	65.83*
Average	45.07	48.15	55.84	52.34	52.22	56.91*

*Estimate

Pittsburgh
Prices of No. 1 Heavy Melt, per Gross Ton

	1982	1983	1984	1985	1986	1987
Jan.	$94.50	$63.90	$98.30	$83.50	$73.50	$79.50
Feb.	91.50	73.25	103.25	88.00	76.50	82.00
Mar.	85.90	78.25	100.50	92.50	73.50	79.10
Apr.	75.50	75.50	100.50	81.50	73.25	76.50
May	64.50	69.10	99.75	73.00	70.50	79.50
June	61.50	72.50	94.50	70.50	69.70	82.50
July	59.00	74.50	88.10	73.50	71.75	85.50
Aug.	57.50	79.70	87.25	77.50	76.30	90.70
Sept.	57.50	82.50	92.00	75.10	76.50	98.75
Oct.	55.25	82.90	87.70	73.50	76.50	115.50
Nov.	52.50	85.50	81.00	69.50	78.50	113.90
Dec.	53.75	92.00	80.70	71.10	79.50	107.50*
Average	67.41	77.46	92.80	77.43	74.67	90.91*

No. 2 Bundles

	1981	1982	1983	1984	1985	1986
Jan.	$60.60	$43.10	$59.50	$50.50	$49.50	$45.50
Feb.	62.50	50.75	59.50	55.00	49.50	45.50
Mar.	53.70	54.50	59.50	56.50	49.50	45.50
Apr.	48.75	51.50	59.50	56.50	46.50	45.50
May	46.50	51.50	59.50	56.50	46.50	48.50
June	44.50	51.50	59.50	50.50	46.50	48.50
July	44.50	51.50	54.30	52.90	46.50	50.50
Aug.	44.50	51.50	53.50	54.50	46.50	51.70
Sept.	42.50	51.50	53.50	54.50	46.00	59.25
Oct.	40.25	51.50	53.10	54.50	45.50	64.50
Nov.	38.10	52.75	52.50	50.50	45.50	63.50
Dec.	37.50	59.50	50.50	49.50	45.50	59.50*
Average	46.98	51.75	56.20	53.49	47.00	52.33*

*Estimate

STATISTICAL REVIEW

Chicago
Prices of No. 1 Heavy Melt, Per Gross Ton

	1982	1983	1984	1985	1986	1987
Jan.	$83.25	$62.70	$92.10	$80.50	$74.50	$78.50
Feb.	79.50	74.25	90.50	80.50	77.50	78.50
Mar.	71.70	77.50	87.50	85.50	74.50	74.10
Apr.	67.00	72.50	85.50	77.90	74.50	72.50
May	58.50	68.30	85.50	68.50	72.50	76.25
June	52.30	71.50	80.50	61.50	71.50	77.50
July	49.50	72.25	77.50	63.10	71.50	79.50
Aug.	50.70	76.90	78.50	72.50	75.50	84.50
Sept.	51.50	79.50	81.50	72.30	73.50	97.50
Oct.	46.50	79.50	80.90	71.75	71.50	116.50
Nov.	46.50	80.75	80.50	69.50	72.50	114.50
Dec.	49.50	84.75	80.50	70.10	72.50	100.50*
Average	58.87	75.03	83.42	72.81	73.50	87.53*

No. 2 Bundles

	1982	1983	1984	1985	1986	1987
Jan.	$65.50	$44.90	$60.70	$59.00	$60.50	62.50
Feb.	62.50	50.75	64.00	59.50	63.50	62.50
Mar.	56.50	54.50	64.50	64.50	60.30	60.50
Apr.	52.50	49.50	64.50	61.50	59.50	60.50
May	47.50	44.50	64.50	62.38	58.50	61.25
June	43.90	44.50	59.50	49.50	56.50	66.10
July	41.50	44.50	49.50	51.90	56.50	68.50
Aug.	41.50	44.50	49.50	61.50	60.50	66.50
Sept.	41.50	44.50	51.50	61.10	57.50	73.50
Oct.	38.50	44.50	51.50	58.75	55.50	88.50
Nov.	38.50	45.75	53.75	56.50	57.50	86.50
Dec.	39.25	56.25	56.30	56.90	57.50	79.50*
Average	47.43	47.38	57.48	58.59	58.65	69.70*

*Estimate

Philadelphia
Prices of No. 1 Heavy Melt, Per Gross Ton

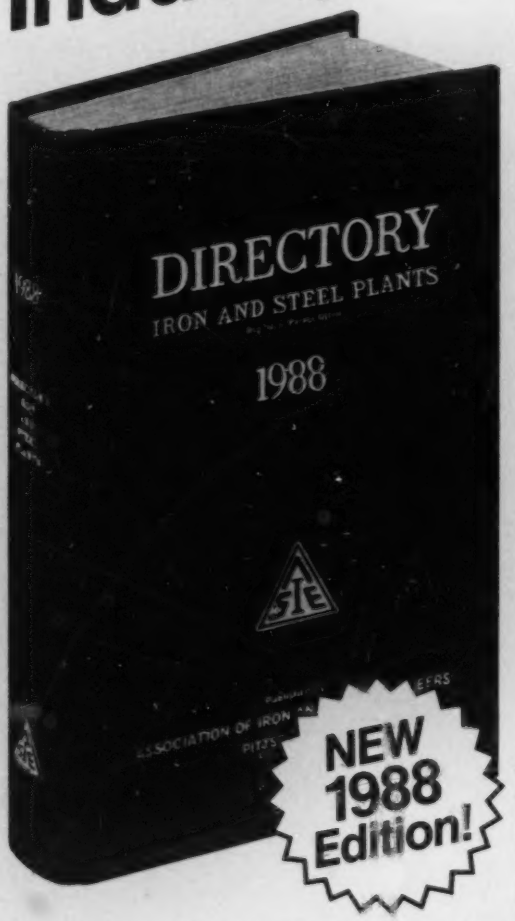
	1982	1983	1984	1985	1986	1987
Jan.	$75.25	$57.50	$90.30	$79.00	$72.50	$70.00
Feb.	75.50	62.50	91.00	81.00	72.90	70.75
Mar.	72.90	63.50	85.75	82.25	72.70	70.50
Apr.	71.50	65.00	84.50	76.90	72.50	70.50
May	65.00	65.70	82.00	70.00	71.50	69.50
June	60.30	68.50	80.50	67.00	71.50	71.90
July	59.50	68.50	80.50	70.30	72.25	73.75
Aug.	59.50	69.50	81.00	72.50	73.50	78.50
Sept.	59.50	69.50	81.50	69.90	72.50	86.00
Oct.	57.00	71.50	80.10	68.25	71.50	94.75
Nov.	54.70	78.00	75.75	67.50	71.50	95.50
Dec.	54.50	85.00	75.90	69.50	71.50	91.50*
Average	63.76	68.64	82.40	72.84	72.16	78.60*

No. 2 Bundles

	1982	1983	1984	1985	1986	1987
Jan.	$43.50	$40.50	$59.70	$49.50	$48.50	$46.25
Feb.	43.50	45.00	64.00	51.25	48.50	45.50
Mar.	43.50	46.50	63.25	51.50	50.90	45.10
Apr.	41.50	45.50	59.10	47.70	53.25	43.50
May	40.50	43.70	56.50	42.00	51.50	43.50
June	40.10	43.00	50.50	41.50	52.30	43.50
July	39.50	41.25	49.50	45.30	54.50	43.50
Aug.	39.50	40.50	50.50	45.50	54.10	43.90
Sept.	39.50	40.50	50.50	43.50	51.50	49.50
Oct.	39.50	43.70	48.90	43.50	50.50	62.50
Nov.	39.50	49.50	47.00	45.00	48.50	59.30
Dec.	39.80	55.00	46.50	45.50	48.50	58.50*
Average	40.80	44.55	53.83	45.98	51.05	$48.71*

*Estimate

The people and plants of the Steel Industry!



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